

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A network element switch, comprising:
a pair of input nodes, each input node having $2n$ inputs and $2n$ outputs, where n is greater than or equal to 1;

a pair of center nodes, each center node receiving n inputs from each of the input nodes and having $2n$ outputs;

a pair of output nodes, each output node receiving n inputs from each of the center nodes and having $2n$ outputs; and

a device configured to calculate the number of signals between each of the input nodes and the center nodes and the number of signals between each of the center nodes and the output nodes, and map~~wherein mapping of signals between nodes, wherein mapping between nodes is selected based on the calculations is selected based on a comparison of a number of signals between each of the input nodes and the center nodes and a comparison of a number of signals between each of the center nodes and the output nodes,~~ to minimize any differences between the number of signals between each of the input nodes and the center nodes and any differences between the number of signals between each of the center nodes and the output nodes;

wherein the mapping of signals is used to make connections through the network element switch.

Claim 2 (canceled).

Claim 3 (original): The network element switch of claim 1, wherein n is greater than or equal to 2.

Claim 4 (original): The network element switch of claim 1, wherein each center node is multi-cast and each output node is bi-cast.

Claim 5 (original): The network element switch of claim 4, wherein each input node is uni-cast.

Claim 6 (original): The network element switch of claim 4, wherein each input node is bi-cast.

Claim 7 (original): The network element switch of claim 1, wherein the inputs and outputs carry STS-48 signals.

Claim 8 (original): The network element switch of claim 1, wherein each node is a $2N$ Clos matrix.

Claim 9 (currently amended): A network element switch, comprising:
a pair of input means for switching, each input means for switching having $2n$ inputs and $2n$ outputs, where n is greater than or equal to 1;

a pair of center means for switching, each center means for switching receiving n inputs from each of the input means for switching and having $2n$ outputs;

a pair of output means for switching, each output means for switching receiving n inputs from each of the center means for switching and having $2n$ outputs; and

a device configured to calculate the number of signals between each of the input nodes and the center nodes and the number of signals between each of the center nodes and the output nodes, and map~~wherein mapping links for signals~~

between nodes, wherein mapping of signals between nodes is selected based on the calculations ~~a comparison of a number of signals between each of the input nodes and the center nodes and a comparison of a number of signals between each of the center nodes and the output nodes,~~ to minimize any differences between the number of signals between the nodes and the mapping of signals is used to make connections through the network element switch.

Claim 10 (canceled).

Claim 11 (original): The network element switch of claim 9, wherein n is greater than or equal to 2.

Claim 12 (original): The network element switch of claim 9, wherein each center means for switching is multi-cast and each output means for switching is bi-cast.

Claim 13 (original): The network element switch of claim 12, wherein each input means for switching is uni-cast.

Claim 14 (original): The network element switch of claim 12, wherein each input means for switching is bi-cast.

Claim 15 (original): The network element switch of claim 9, wherein the inputs and outputs carry STS-48 signals.

Claim 16 (original): The network element switch of claim 9, wherein each means for switching is a $2N$ Clos matrix.

Claims 17-20 (canceled).

Claim 21 (currently amended): A method of mapping signals across a network element switch having a plurality of input nodes, a plurality of center nodes and a plurality of output nodes, comprising:

for each possible mapping of a specific signal across the network element switch, calculating the number of signals between each of the input nodes and center nodes;

for each possible mapping of the specific signal across the network element switch, calculating the number of signals between each of the center nodes and output nodes; and

selecting the mapping of the specific signal across the network element switch where the difference in the number of signals between each of the input nodes and center nodes is minimized and the difference in the number of signals between each of the center nodes and output nodes is minimized;

wherein the mapping of signals is used to make connections through the network element switch.

Claim 22 (previously presented): The network element switch of claim 1 wherein an any-to-any mapping is not guaranteed from the pair of input nodes to the pair of output nodes.